MODELS FOR COMMUNITY WELL-BEING

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Predicting and Ranking Sources of Well-Being in Rural Resource Dependent Communities

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Introduction

A traditional aspect of western rural lifestyles has been the relationship between people and land resources or nature. Concomitant with the underlying aspects of western culture have been numerous public land management programs that have been designed in the context of western rural lifestyles. Public water development projects, timber management programs, federal grazing programs and mining projects have their historic foundations in improving the standard of living in the rural west. In recent years, it has become increasingly recognized that management of federal lands for outdoor recreation uses may also lead to growth and development as tourism has become a substantial form of economic activity.

As is the case of all regions in the United States, the rural west is changing. For instance, in some parts of rural Montana, there is substantial out-migration, and in other regions of the state there is considerable in-migration and growth. And while there is overall growth in the state, there has been a decline in employment in agriculture, mining, and wood products, the industries that have traditionally been the mainstays in the economic life of the state.

Since the traditional cultures of the rural west have been so directly related to livelihoods, and the mainstream occupations are becoming relatively less frequent means of financial support, one may expect that substantial changes in attitudes, beliefs, and values concerning nature and the environment are also taking place in many rural western communities. Changing populations and social values are also

important to the renewed interest by the Forest Service in efforts for rural development.

The underlying premise regarding public land management is that agencies like the Forest Service must keep abreast of people's tastes and preferences regarding resource management and more fundamental social values regarding mankind and nature so that efforts to "help" rural communities will actually succeed.

This study focuses on the relationship between people's attitudes,beliefs and values concerning important sources of rural community well-being. More specifically, it explores the relationship between the resource dependency of rural communities and the differences, if any, in the relative importance of various dimensions of communities in contributing to overall community well-being. Each survey respondent is asked to indicate their degree of satisfaction with important sociological dimensions of communities as well as their overall satisfaction with the community in which they reside. Statistical analysis of survey responses is designed to determine whether there are important differeces in community well-being which are unique to different forms of natural resource dependency (timber, mining, agriculture and tourism). In addition, what factors help to contribute to the collective sense of the community's state of well-being and how important or how much weight should be given to the various factors in the well-being of the community.

Literature Review

The literature on well-being in rural communities suggests that social systems in rural communities are linked to natural resources through local means of production (Landis, 1938; Field and Burch, 1988;

Machlis et al, 1990). Changes in the availability of or access to resources may bring about real or perceived threats to the community. Researchers have documented increases in crime (Freudenburg, 1986 ; Krannich et al, 1984) and the deterioration of the sense of community when changes occur (Gramling and Freudenburg, 1992). Change may also alter the way in which residents perceive themselves as functioning in the community; it may alter authority relationships and social practices resulting in negative behavior by residents such as decreased community involvement (Gramling and Freudenburg, 1992).

Although resource dependency has primarily been measured in economic terms related to production (Beuter and Schallau, 1978), each type of community also has a different social structure and thus each reacts to change differently. A comparison of forestry, mining, tourism and agricultural communities found that the type of resource dependency was critical to social structure, with the timber dependent communities being least prosperous (Drielsma, 1984). Residents of timber dependent communities are therefore expected to place factors such as employment and opportunities for young people highest among those factors which contribute to their well-being. Communities dependent on tourism, on the other hand, should value environmental factors which contribute to their livelihoods. Farmers and ranchers may be less concerned with employment and the environment and more concerned with law enforcement. Research suggests that farmers are less likely to be environmentally concerned than those employed in other professions (Buttel and Flinn, 1978b; Mohai and Twight, 1986; Samdahl and Robertson, 1989; Fortmann and Kusel, 1990), but more likely to express concern about crime (Belyea and Zingraff, 1988;

Saltiel et al, 1992). This is believed to be due primarily to the relative isolation of farms and the remoteness of equipment and out buildings which increases the risk of theft and vandalism((Bankston et al, 1987; Lee, 1982; Donnermeyer and Cox, 1981).

Well-Being is also associated with individual socio-economic characteristics. Most researchers suggest that the environment is an important component of well-being for the young and well-educated (Buttel and Flinn, 1978b; Honnold, 1984; Milbrath, 1984). However, Jackson and Lambrecht (1993) discovered the opposite relationship between age and concern about the destruction of scenery in Montana's Swan Valley; and age has been found to be positively related to environmentalism among farmers (Molnar, 1985). The relationship between age and environmental concerns in Montana is therefore uncertain. Milbrath (1984) suggests that environmentalism is more prominent among people with higher levels of education, but less so among people of higher income groups. Because these characteristics commonly occur together, they tend to cancel one another out. Fortmann and Kusel (1990) found that women and persons with higher levels of education tend to be more concerned about the environment. Jackson and Lambrecht(1993) found that destruction of scenery is a major concern for those with higher incomes and levels of education. Other factors may also be related to socio-economic characteristics. For example, it is logical that the elderly would be more concerned about health care than education or employment. Conversely, those with young families would be very concerned about these issues.

The foregoing discussion suggests that communities dominated by well-educated people having non-farm occupations will place issues

regarding the environment and nature higher on a scale of components of well-being. It also suggests that communities which are dependent primarily on a single resource will have a index of well-being which reflects the interests of that community type. For example, Fortmann and Kusel (1990) found that higher education is normally associated with environmental attitudes; however, in timber dependent areas in which there are a number of foresters, education is not necessarily correlated with environmentalism. In such areas, concern about jobs may be a more important factor in well-being than environmental quality.

Methods

The data for this study were collected in a 1994 statewide survey of rural Montana counties. Response categories were scaled in Likert format with possible responses ranging from strongly agree to strongly disagree. Eligible respondents were residents of rural Montana counties who are 18 years of age or older. For the purposes of this study, rural counties are those with a density of no more than 10 persons per square mile and no town or city with a population of more than 12,000 persons. In addition to a statewide sample of 418, four counties were oversampled. Using census and other employment data, the four rural counties were chosen which are most indicative of the types of communities of interest. They are listed in the following table.

COUNTY	TYPE	NUMBER SAMPLED
Carter	Agriculture	112
Jefferson	Mining (7.1)	136
Park	Tourism (2.1)	104
Sanders	Timber (21.9)	124

Table 1: Oversampled counties by type and number sampled. Perecent employed in selected industry in parentheses.

This categorization allows one to examine whether the responses in the specific dependent communities are representative of the attitudes and values of the broader sample. In other words, can the broader sample be used to characterize the attitudes, values, and beliefs of specific communities if one knows something about resource dependencies and socio-economic attributes of the particular community?

The statewide sample as well as the samples of the four counties were generated using the University of Montana Bureau of Business Research random digit sampling procedure. This procedure weights the sample of telephone numbers based on current information on estimated populations for existing telephone prefixes and specifically excludes blocks of phone numbers known to be nonresidential. The product was a list of telephone numbers representative of those living in rural Montana households in which there is one or more residential phone line. Approximately 95% of Montana households have one or more telephone lines.

The actual interviews were conducted by telephone interviewers at Metropolitan Analysis and Retrieval Service who were trained and monitored by members of the research team. Before replacing a phone number in the sample, interviewers made a minimum of four attempts to establish contact, with the attempts spread out over three different shifts. Once a phone contact was achieved, a random procedure was used to select the respondent from the eligible residents based on the total number of male and female adults in the household. This eliminates the possibility of systematically choosing one or another household member because of the time of day or week or other source of bias.

The main body of the survey instrument (see Appendix ?) consisted of 100 questions covering areas such as community well being, land use preferences, types of acceptable development, use of public land, political participation, membership in organizations concerned with land-use issues, trust in officials or others in making land-use decisions, tenure in the community, and basic demographic characteristics.

The Dimensional Structure of Community Well-being

The survey instrument included 14 items designed to measure community well-being (see items 1-14 in Appendix ?). Each item consisted of a statement regarding some specific aspect of community well-being such as education, housing, employment opportunities, etc. Respondents were asked whether they strongly agreed, agreed, were unsure about, disagreed, or strongly disagreed with each statement. A response of strongly agree was coded 5, agree was coded 4, unsure was coded 3, disagree was coded 2, and strongly agree was coded 1.

Factor analysis is an analytical technique that allows researchers to identify a relatively small number of

underlying factors or dimensions that can be used to represent the relationships among a larger number of interrelated variables (Norusis, 1990, p. B-125). Thus, the dimensional structure of a set of variables can be discerned empirically by examining the covariance among that set of variables (Kim and Mueller, 1978). The result of a successful factor analysis is a set of hypothetical dimensions that account for this covariance. Weighted factor scores can then be calculated for each of these dimensions. The factor scores can, in turn, be treated as variables in other analyses.

The basic steps in a factor analysis are:

1) Compute a correlation matrix for all the variables in the analysis;

2) Extract a number of underlying, hypothetical factors that empirically and logically represent the dimensional structure of the larger set of variables;

3) "Rotate" the factors to make them more interpretable; and

4) Compute weighted factor scores that can then be used in other analyses (Norusis, 1990, p. B-127).

For purposes of this paper, the 14 community well being items from the statewide sample were factor analyzed. A correlation matrix was calculated and an initial set of factors was extracted using "principal components analysis". In principal components analysis, the first principal component is the linear combination of variables that accounts for the largest amount of variance in the sample. The second principal component is the linear combination of variables that is uncorrelated with the first and accounts for the next largest amount of variance in the sample. The third principal component is the linear combination of variables that is uncorrelated with the first two and accounts for the next largest amount of variance in the sample. Principal components are extracted in this way until all the variance in the sample is accounted for (Norusis, 1990, p. B-129). Some subset of the principal components will become the extracted factors. For purposes of this analysis, only those principal components that explain more than 6% of the total sample variance were extracted as factors. The result was a set of 6 factors which together account for 63.4% of the total variance.

The purpose of rotation in factor analysis is to redistribute the explained variance for the individual factors in such a way as to make the factor structure easier to understand. For purposes of this analysis, the factor matrix was rotated using the varimax method. Varimax rotation is designed to minimize the number of variables that have high loadings on a factor. Rotation shows that the 14 variable combine with one another into 6 factors that have a high degree of interpretability.

The extracted and rotated factors along with the component variables are shown in Table ?. The first factor is basically a combination of items 4, 5 and 12 and measures perceived economic and related opportunities for adults and youth. The second factor, which depends most heavily on items 7, 8, and 14 is clearly a measure of appreciation for the environment. The third factor, based primarily on items 3 and 13 is a measure of sociability. The fourth factor, a combination of items 1, 2, and 9, measures satisfaction with the infrastructure. The fifth factor, which depends most heavily on items 6 and 10, seems to tap into a couple of other

aspects of quality of life: cultural opportunities and freedom from worry about crime. The fifth factor is based primarily on a single item, number 11, and measures citizen access to leaders and the political process. These six factors can be seen as representing six dimensions or aspects of community well-being.

For each factor, a factor score can be calculated. For purposes of this analysis, factor scores were computed using the regression method. In the regression method the factor score is linear combination of each of the original variables weighted by the factor loadings for each variable on the underlying factor. A factor loading is a coefficient indicating the correlation between the underlying factor and a particular variable. Factor scores calculated in this manner will have a mean of 0 and a standard deviation of 1.

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Modeling Community Well-being

Given the six factor scores based on the combination of 14 dimensions of community well-being discussed in the previous sections, the focus of the analysis now turns to modeling overall community well-being as a function in part of the degree of satisfaction with the various community dimensions. More precisely, we hypothesize that a person's overall perception of the quality of the community is a function not only of each factor score, but also of the person's particular socio-economic characteristics such as age, sex, income or education. Measurement of the dependant variable, the respondent's overall sense of community quality (a global measure of community well-being) was accomplished in the survey through the following question.

Now, I would like you to rate your community as a place to live using a scale from zero to ten where zero is terrible and ten is excellent. What is the overall rating of the quality of your community?

Responses to the question fall into an eleven point ordinal scale of overall community quality since there was no further means to utilize or create an interval scale. As a result, the approach to modeling community well-being incorporated an ordered logit regression model which relies on maximum likelihood estimation techniques rather than ordinary least squares. (Maddalla, 1983 and Kmenta, 1986). The six factor scores utilized in the model of well-being can be classified as estimated versus calculated. Factor scores were estimated for each respondent in the state-wide rural random sample. In addition, the coefficients for the statewide random sample were used to calculate the six factor scores for each respondent in the four over-sampled rural communities. Since we also

hypothesized that communities may differ with respect to the sources of community well-being, our final model is expressed in functional form as follows:

$Y = f(SF_1..SF_6, COM_1..COM_4, SF_1COM_1..SF_6COM_4, AGE, SEX, INCOME, EDUCATION)$

Where: Y= the 11-point overall community quality scale.
$FS_1..SF_6$ = The six community satisfaction factor scores include estimated and calculated scores for the combined state wide sample and four over sampled communities.

$COM_1..COM_4$ = The dummy variables for the four over sampled communities where Community 1 is the timber community, community 2 is the mining community, community 3 is the tourism community and community 4 is the agriculture community.

$SF_1COM_1..SF_6COM_4$=24 interaction variables for indicating potential shifts in the importance of each factor score in each community.

AGE= Respondent's age in years.

SEX= Dummy variable for respondent's gender.

INCOME=Dummy variables for low, medium and high household income of the respondent.

EDUCATION=Number of years of formal education.

The above model is rather large and onerous with some 38 independent variables (including the 24 interaction terms). Quite clearly, the introduction of the interaction terms, which are transformed products of the community dummy variables and satisfaction factor scores, will introduce some degree of collinearity. As a result, estimates of the fully specified model and a more parsimonious version, where non significant terms are eliminated, will be presented in the following section.

Statistical Results

The ordered logit model is based upon an assumed relationship of:

$$Y_{*i} = a + BX_i + e_i$$

e_i has a standard logistic (LGD) distribution and the error terms are independent. The assumption is that Y^*_I is related to the observable ordered categories of choice in the following way.

where:

$Y^*=1$ if $Y^*_i < 0$,

$=2$ if $0 <= Y^*_i < Mu_i$

.

.

$= M$ if $Mu_{M-2} <= Y^*_i$.

From the above relationship the following probabilities are specified.

$P(Y_i = 1) = 0 - LGD(-a-BX_i)$

$P(Y_i = 2) = LGD(-a-BX_i) - LGD(-Mu_2-a-BX_i)$

.

.

$P(Y_i = M) = LGD(Mu_{M-2} - a - BX_i) - 0.$

In the case of the model to be estimated, M = 11 categories. As is shown above, the Mu's are free parameters which provide the ranking. a, B_i, and the Mu's are estimated from the log-likelihood function.

Turning first to the parameter estimates of the fully specified model which are presented in table W, we find the following results.

Table W

Y = GLOBAL COMMUNITY SATISFACTION

Ordered Probit Model n=829
Maximum Likelihood Estimates % correctly classified=34.86
Log-Likelihood.....-1362.552
Restricted (Slopes=0) Log-L. -1522.310
Chi-Squared (38) 319.5163
Significance Level 0.0000000

Variable	Coefficient	Std. - Error	T-ratio	P-Value
Constant	5.3332	0.7771	6.863	0.00000
FS_1	0.60340	0.9184E-01	6.570	0.00000
FS_2	0.65324	0.9787E-01	6.675	0.00000
FS_3	0.44262	0.9798E-01	4.518	0.00001
FS_4	0.52689	0.9450E-01	5.576	0.00000
FS_5	0.26227	0.1043	2.515	0.01192
FS_6	0.34067	0.9540E-01	3.571	0.00036
COM_1	-0.35428	0.2271	-1.560	0.11872
COM_2	-0.10292	0.1920	-0.536	0.59193
COM_3	0.46176	0.2231	2.070	0.03845
COM_4	0.29266E-01	0.1892	0.155	0.87710
COM_1SF_1	-0.12584	0.1983	-0.634	0.52577
COM_1SF_2	0.42491	0.2503	1.697	0.08964
COM_1SF_3	0.33446	0.2327	1.438	0.15056
COM_1SF_4	0.38869E-01	0.2482	0.157	0.87556
COM_1SF_5	-0.31834	0.2536	-1.256	0.20929
COM_1SF_6	0.20982	0.2704	0.776	0.43781
COM_2SF_1	0.36011E-01	0.1795	0.201	0.84104
COM_2SF_2	-0.30121	0.1943	-1.550	0.12107
COM_2SF_3	-0.32003	0.2331	-1.373	0.16976
COM_2SF_4	0.29814E-01	0.2071	0.144	0.88555

Variable	Coefficient	Std. - Error	T-ratio	P-Value
COM_2SF_5	-0.82492E-01	0.2261	-0.365	0.71527
COM_2SF_6	-0.15925	0.2131	-0.747	0.45494
COM_3SF_1	0.14879	0.2336	0.637	0.52410
COM_3SF_2	-0.50500E-01	0.2597	-0.194	0.84583
COM_3SF_3	0.92481E-01	0.2442	0.379	0.70485
COM_3SF_4	0.19171	0.2471	0.776	0.43785
COM_3SF_5	0.91885	0.2517	0.365	0.71505
COM_3SF_6	-0.93382E-01	0.2584	-0.361	0.71780
COM_4SF_1	0.49468E-01	0.1902	0.260	0.7942
COM_4SF_2	0.12027	0.1895	0.635	0.52566
COM_4SF_3	-0.82027E-1	0.1886	-0.435	0.66354
COM_4SF_4	0.55832E-01	0.2077	0.269	0.78806
COM_4SF_5	-0.37225	0.2036	-1.828	0.06750
COM_4SF_6	0.34504E-01	0.1830	0.189	0.854043
SEX	-.18572	0.1350	-1.376	0.16880
AGE	0.22653E-01	0.4306E-02	5.261	0.00000
EDUCATION	0.14910E-01	0.2636E-01	0.566	0:57158
INCOME	-0.18680	0.1472	-1.269	0.20429
Mu_1	0.52601	0.3908	1.346	0.17853
Mu_2	1.1427	0.5364	2.130	0.03316
Mu_3	2.2704	0.6109	3.716	0.00020
Mu_4	2.9660	0.6324	4.690	0.00000
Mu_5	4.3467	0.6515	6.672	0.00000
Mu_6	4.9175	0.6556	7.501	0.00000

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Mu_7	6.1014	0.6634	9.198	0.00000
Mu_8	7.9765	0.6729	11.855	0.00000
Mu_9	8.8349	0.6775	13.040	0.00000

Table X

Y=GLOBAL COMMUNITY WELL-BEING

Ordered Probit Model n=864

Maximum Likelihood Estimates % correctly classified = 36.23

Log-Likelihood -1426.111

Restricted (slopes=0) Log-L -1576.589

Chi-Squared (10) 300.9570 Logistic probability model

Significance Level 0.0000000 N[0,1] used for significance levels.

Variable	Coefficient	Std. Error	t-ratio	Prob
Constant	5.3375	0.6444	8.283	0.00000
SF_1	0.61739	0.6281E-01	9.830	0.00000
SF_2	0.67446	0.7215E-01	9.348	0.00000
SF_3	0.39008	0.6995E-01	5.576	0.00000
SF_4	0.53914	0.6826E-01	7.898	0.00000
SF_5	0.18398	0.6980E-01	2.636	0.00839
SF_6	0.31079	0.6496E-01	4.784	0.00000
COM_3	0.42699	0.1950	2.190	0.02855
COM_2SF_3	0.41236	0.1908	2.161	0.03066
COM_3SF_2	-0.34052	0.1727	-1.971	0.04869
AGE	0.22173E-01	0.3989E-02	5.558	0.00000
Mu_1	0.52942	0.3877	1.366	0.17206
Mu_2	1.1456	0.5090	2.251	0.02439
Mu_3	2.2875	0.5824	3.928	0.00009

Mu_4	2.9779	0.5988	4.973	0
Mu_5	4.3571	0.6185	7.044	0
Mu_6	4.9144	0.6220	7.900	0.00000
Mu_7	6.0673	0.6287	9.650	0.00000
Mu_8	7.9229	0.6326	12.388	0.00000
Mu_9	8.7495	0.6426	13.617	0.00000

Based upon an alpha level of .05, all of the independent variables which are significant in the fully specified model (Table W) are also significant in the parsimonious version (Table X). In addition, two interaction terms are significant in the parsimonious version which are not significant in the fully specified version. Since the interaction terms were developed by multiplying the dummy variable for each of the over sampled communities (COM_1 . . . COM_4) times each of the community satisfaction factor scores (SF_1 . . . SF_6), we suspect that collinearity between the transformed variables and the dummy variables. In the sense of producing meaningful results, the parsimonious model is more meaningful than the fully specified version because the interaction variables which are significant indicate that the coefficients for the community satisfaction factor scores shift in two communities. The nonzero coefficient for community 3 (COM

3) indicates that residents in the most tourism dependant sample are more likely to indicate high scores of global community satisfaction and are less likely to indicate low levels of global community satisfaction than are other people in rural areas of Montana.

You will note that all of the regression coefficients for the six satisfaction scores are positive in both models. This indicates that higher responses to the underlying community satisfaction scores are more likely to produce high levels of global community satisfaction. Of course this is exactly what we expected, although we defer the discussion of the interpretation of the crime and culture factor score (SF_3) to a subsequent paragraph in the paper.

One of the most important values derived from using the factor scores in modeling global community satisfaction lies in our ability to interpret the regression coefficients associated with each factor. Since the factor scores are [0,1] normally distributed, we can compare the magnitude of the regression coefficients and make comparisons about which of the six factors are most important in contributing to global community satisfaction. Table Y below summarizes the

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regression coefficients for the statewide rural sample and the four over sampled communities.

Table Y

Coefficients of Satisfaction

Variable Name	Statewide, Agriculture	Tourism and Counties (Rank)		Timber County (Rank)	
Economic (SF_1)	.61739	(2)	.61739	(3)	.61739 (1)
Environment (SF_2)	.67446	(1)	.67446	(2)	.32394 (4)
Churches-Friends (SF_3)	.39008	(4)	.80244	(1)	.39008 (3)
Infrastructure (SF_4)	.53914	(3)	.53914	(4)	.53914 (2)
Crime/Culture (SF_5)	.18398	(6)	.18398	(6)	.18398 (6)
Political Access (SF_6)	.31079	(5)	.31079	(5)	.31079 (5)

Table y clearly shows how the six factors of community well-being contribute to global community satisfaction. In the statewide random sample as well as the agriculture dependant and tourism dependant counties, the environmental factor is ranked as most important followed in order by the economic, infrastructure, churches/friends and neighbors, political access and crime/culture. In the timber dependant

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county, the churches/friends and neighbors has the largest coefficient followed by the remaining factors in the same order as just mentioned. The mining dependant county places the environmental factor in 4th place. The economic factor is most important followed by infrastructure, and churches/friends and neighbors being ranked ahead of the environmental factor in the mining county. The political access and crime/culture factors remain less important in the mining county.

It is also rather clear by inspection that some of the regression coefficients are close in magnitude. This gives rise to the question of whether the differences in the regression coefficients are statistically significant. Stating the problem in a general way and based on the approach shown in Pindyck and Rubenfeld (1981) we will conduct tests of the equality of two regression coefficients as follows.

$$Y_i = B_1 + B_2(X_{2i} + X_{3i}) + GX_{3i} \ldots + B_{ki}X_{ki} + e_i$$

$$= B_1 + B_2X_{2i} + (B_2 + G)X_{3i} + \ldots + B_kX_{ki} + e_i$$

Under the null hypothesis, G = 0, and the standard student t distribution applies. In the two instances where the

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transformed interaction variables are significant, they will be added to the appropriate factor score and another independent variable in order to test whether the appropriate G coefficient is non-zero.

Table Z indicates the results of the tests of significance for differences in the various factor scores

Table Z

Inequality in Satisfaction Factor Regression

Coefficients

(NSD = No Significant Difference)

	SF_1	SF_2	SF_3	SF_4	SF_5	SF_6
SF_1 (Econ)						
-State,COM3&4	-----					
-COM1	-----					
-COM2	-----					
SF_2 (Enviro)						
-State&COM3&4	NSD					
-COM1	NSD					
-COM2	$SF_1>SF_2$					
SF_3 (Church&Friends)						
-State,COM3&4	$SF_1>SF_3$	$SF_2>SF_3$				
-COM1	$SF_1<SF_3$	$SF_2<SF_3$				
-COM2	$SF_1>SF_3$	NSD				
SF_4 (Infrastructure)						
-State,COM3&4	NSD	NSD	NSD			
-COM1	NSD	NSD	NSD			
-COM2	NSD	NSD	NSD			
SF_5 (Crime&Culture)						
-State,Com3&4	$SF_1>SF_5$	$SF_2>SF_5$	$SF_3>SF_5$	$SF_4>SF_5$		
-COM1	$SF_1>SF_5$	$SF_2>SF_5$	$SF_3>SF_5$	$SF_4>SF_5$		
-COM2	$SF_1>SF_5$	$SF_2>SF_5$	$SF_3>SF_5$	$SF_4>SF_5$		
SF_6 (Political Access)						
-State,Com3&4	$SF_1>SF_6$	$SF_2>SF_6$	NSD	$SF_4>SF_6$	NSD	--

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-COM1	$SF_1>SF_6$	$SF_2>SF_6$	$SF_3>SF_6$	$SF_4>SF_6$	NSD	--
-COM2	$SF_1>SF_6$	NSD	NSD	$SF_4>SF_6$	NSD	-

In three populations; the statewide rural sample, the tourism community, and the agricultural community, there is no significant differences in the coefficients for the economic factor, the environmental factor and the infrastructure factor scores. In a quantitative sense these three factors finish in a statistical "dead heat" in terms of their importance in contributing to global community satisfaction for these three populations. Tied for last or least importance are the crime/culture and political access factors. The differences in these coefficients are not statistically significant while the coefficients for the other four factors are all significantly greater than the coefficients for these two factors. Finally the intermediate factor in the statewide sample as well as the

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agricultural and tourism samples is the churches/friendships factor (SF_3) scores.

The timber community (COM1), is unique in terms of the importance of the churches/friendship factor. This factor coefficient is significantly greater than all of the other coefficients. The economic factor (SF_1) the environmental factor (SF_2) and the infrastructure factor (SF_3) are tied for second place in the timber sample with the crime/culture and political access factors (SF_5 and SF_6) tied for last place in this sample.

Finally, in the mining community (COM2), the economic factor (SF_1) and the infrastructure factor (SF_4) are tied for first place in importance. This occurs because the environmental factor is discounted relative to it's ranking in the other samples. The difference between SF_4, the infrastructure factor, and the depreciated environmental factor is not significant. In fact the environmental factor is only significantly greater than the crime/culture factor (SF_5), the factor with the smallest coefficient.

In summary, the coefficients which are developed for the statewide sample also are reflective of the

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contributions which the factors of well-being contribute to overall community satisfaction in both the agricultural community and the tourism community. While the coefficients for the tourism community are no different from those of the state-wide sample and the agricultural community the dummy variable for the community is significant and positive in both the fully specified equation and the parsimonious version. This means simply that people in this sampled area are more likely to indicate very high global satisfaction scores than are people elsewhere in the state. This is true holding all of the other independent variables constant.

The timber community is unique from the random sample and other over sampled communities in terms of the apparent importance that people see friends and neighbors along with churches as being key components of community well-being. Residents in the mining community are unique from other areas in the state in that tend to depreciate the importance of the environmental factor in contributing to global community satisfaction. Thus, while there are some unique factors in unique communities, the results of tests of

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differences in regression coefficients (Table Z) suggests that many of the differences are not significant. There are broad patterns of the major underlying factors of community well-being which may be translated from place to place.

One other variable is significant both in the fully specified model and the more parsimonious version. The respondant's age helps explain overall satisfaction with overall community quality. As age increases, respondants are more likely to be highly satisfied with the overall quality of their community and less likely to report low quality scores. This may simply reflect the fact that we are a highly mobile society and that older people have had more of a chance to reside in a place of their choice. It may also reflect some larger life cycle where striving is replaced with contentment.

Some Concluding Thoughts

Federal land managing agencies such as the US Forest Service of Bureau of Land Management may be seen as agencies which are in a somewhat unique position in terms of the ability to contribute to community well-being. Clearly, the Forest Service or BLM can both manage the production of land

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based commodities such as timber forage which affect the economic factors (access to good jobs, employment opportunities for young people) and they may jointly engage in activities which enhance or diminish the environmental factor (beauty of natural landscapes, access to high quality outdoor recreation or overall environmental quality). For agencies such as the Forest Service, the potential source of power in community enhancement may also be seen as destroying community well being if there is a perception that environmental factors are adversely impacted by land managing activities.

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